

Abstract

Neurology. 2006 Jul 25;67(2):315-8.

Dietary folate, vitamin B12, and vitamin B6 and the risk of Parkinson disease.

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BACKGROUND: Increased homocysteine levels might accelerate dopaminergic cell death in Parkinson disease (PD), through neurotoxic effects. Higher dietary intakes of folate, vitamin B12, and vitamin B6 (cofactors in homocysteine metabolism) might decrease the risk of PD through decreasing plasma homocysteine. Moreover, vitamin B6 might influence the risk of PD through antioxidant effects unrelated to homocysteine metabolism and through its role in dopamine synthesis.

METHODS: In the Rotterdam Study, a prospective, population-based cohort study of people aged 55 years and older, the authors evaluated the association between dietary intake of folate, vitamin B12, and vitamin B6 and the risk of incident PD among 5,289 participants who were free of dementia and parkinsonism and underwent complete dietary assessment at baseline. PD was assessed through repeated in-person examination and continuous monitoring by computer linkage to medical records. Data were analyzed using Cox proportional hazards regression analysis.

RESULTS: After a mean follow-up of 9.7 years, the authors identified 72 participants with incident PD. Higher dietary intake of vitamin B6 was associated with a significantly decreased risk of PD (hazard ratio per SD, 0.69 [95% CI 0.50 to 0.96]; for highest vs lowest tertile, 0.46 [0.22 to 0.96]). Stratified analyses showed that this association was restricted to smokers. No association was observed for dietary folate and vitamin B(12).

CONCLUSIONS: Dietary vitamin B6 may decrease the risk of Parkinson disease, probably through mechanisms unrelated to homocysteine metabolism.

PMID: 16864826